



# RESOURCES: BEST PRACTICES & ALTERNATIVE PRACTICES TO PEST MANAGEMENT

## IPM & PESTICIDE SAFETY EDUCATION (IPM-PSE)

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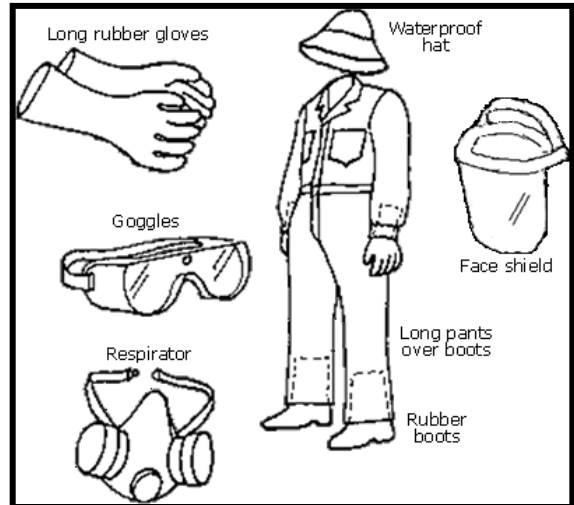
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## BACKGROUND

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### EPA's Worker Protection Standard (WPS)

WPS is a regulation aimed at reducing the risk of pesticide poisonings and injuries among agricultural workers and pesticide handlers. The WPS offers protections to over three and a half million people who work with pesticides at over 560,000 workplaces. The WPS contains requirements for [pesticide safety training](#), notification of pesticide applications, use of personal protective equipment, restricted entry intervals following pesticide application, decontamination supplies, and emergency medical assistance.



California Pesticide Worker Protection Standards are described in the following sections of California Code of Regulations (Title 3 Food & Agriculture) Division 6 Pesticides and Pest Control Operations- Chapter 3 Pest Control Operations- Sub Chapter Pesticide Worker Safety:

[Section 6701](#) Interpretations Consistent with Federal Standards;

[Section 6702](#) Employer Employee Responsibilities;

[Section 6724](#) Handlers Training;

[Section 6764](#) Field Workers Training

[The Federal Insecticide, Fungicide, and Rodenticide Act](#) (FIFRA) gives [EPA](#) the authority to classify pesticides for restricted use and requires persons who use restricted use pesticides to be certified. [California Department of Pesticide Regulations](#) & [California Structural Pest Control Board](#) coordinates the continual development and maintenance of training materials, programs and examinations.

## Types of Pesticide Applicators

There are two types of pesticide applicators:

1. **Commercial applicators** are professionals who are in the business of applying pesticides. Commercial applicators apply pesticides as a major part of their jobs to land or property that they do not own or lease.
2. **Private applicators**, including farmers, ranchers and greenhouse growers, are certified to use Restricted-Use pesticides to produce agricultural commodities on land that they or their employers own or lease. To be certified in California, private applicators must obtain and review the [California Private Pesticide Applicator Training](#) then send an application form with a questionnaire to the [Pesticide Section of the EPA Region 09 Office](#) [Pesticide Section of the EPA Region 9 Office](#). EPA provides both the referenced manual and applicator training to private applicators in California.

## A Model of Public Agency's Pesticide Safety Education Project: Santa Clara County's IPM-PSE

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The Santa Clara County's Integrated Pest Management-Pesticide Safety Education (SCC IPM-PSE) project's mission is to ensure proper use of pesticides through applicator education and training, address urban concerns about pesticide use and protect the people and the environment from risks. IPM-PSE project encompasses three broad areas: implementation of pesticide education outreach programs directed at pesticide user groups and the general public; coordination of pesticide research and pesticide impact assessment projects between researchers and specialists; and transfer of regulatory information from EPA and California Department of Pesticide Regulations to the regulated community and other interested parties.

Santa Clara County employs right of ways, regional parks and urban turf & landscape maintenance workers or hire contractors. Part of their job responsibility is to apply pesticides to maintain pest free environment throughout the county facilities & operations. The IPM-PSE primary



objective is to provide personal safety training to pesticide applicators in order to reduce pesticide handling & application risks, an integral component of the **human and environmental health protection**. Its main strategy is to engage pesticide applicators into precautionary environmental safety think process, prepare them to become professional pest managers, consider alternative pest management practices, not just the safe

pesticide applicators. The SCC IPM-PSE project will also be made available to all interested groups as part of Santa Clara County's IPM awareness education & outreach.



## Target Audience

Santa Clara County's IPM Program is currently working on a unique, interdisciplinary IPM-PSE curriculum relative to pesticide issues, subject material and subject matter specialist's

database and plans to deliver the subject matter specific training to the following target audience:

- **Commercial Pesticide Application & Safety Training to Industrial & Right-of-Way Pesticide Applicators:** individuals involved in the application of pesticides on right-of-way areas involved in common transport such as federal, state and county highways and roads; electric utility lines (including transformer stations and substations); roadside rest areas and parks; pipelines; equipment yards; railroads; public surface drainage ways; telephone and other communication network infrastructures; irrigation ditch banks; and bicycle, bridle, snowmobile, and other public paths, or trails.
- **Commercial Pesticide Application & Safety Training to Residential/Commercial Urban Lawn, Landscape & Ornamental Pesticide Applicators and Pest Control Advisors/Supervisors:** individuals involved in the application of pesticides on turf grass for commercial lawns, institutional and industrial grounds golf courses, athletic fields, other recreational turf in the parks, airports, and cemeteries etc., ornamental trees, shrubs, beds, flowers and other ornamental plants.
- **Commercial Pesticide Application & Safety Training to Residential/Commercial Interiorscape Pesticide Applicators and Pest Control Advisors/Supervisors:** individuals involved in the application of pesticides to house plants and other indoor ornamental plants kept or located within structures occupied by humans, including, but not limited to offices, shopping malls, other places of business and other dwelling places.
- **Commercial Pesticide Application & Safety Training to Residential/Commercial Structural Pesticide Applicators and Pest Control Advisors/Supervisors:** individuals involved in the application of pesticides, bait stations, or devices intended for use for preventing, destroying, repelling or mitigating structural pests, including without limitation insects and rodents.
- **Pesticide Application & Safety Training to Home & Garden Private Pesticide Applicators**
- **Pesticide Safety Education – K 1-12**

## California Pesticide Safety Education Speakers Database

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Santa Clara County's IPM Program is designing a PASE Speakers database to be a pesticide education resource for pesticide safety educators in California. Through this database we hope to allow educators to share information on effective speakers and to find potential speakers on a topic they might need. You are welcome to add to our database the names and contact information of any speakers that will come to Santa Clara County to speak on pesticide related topics. Please email [Naresh.Duggal@ceo.sccgov.org](mailto:Naresh.Duggal@ceo.sccgov.org) with names and contact information.

## Suggested Topics for IPM-PASE Speakers

- 1. Use of Pesticides:** Mixing & loading including: proper mixing and loading techniques, label requirements, closed systems, adjuvant for drift control and other purposes, measuring, pH of water and other factors to consider, procedures for spill prevention, control and clean up, site locations and construction, prevention of contamination, and security. Application including: proper application techniques to control off target movement, new application techniques, procedures for spill prevention, control and cleanup, label requirements. Equipment including: calibration, selection of correct equipment for the job, maintenance and care, clean up, new equipment. Storage and disposal including: bulk storage, label requirements, site requirements such as ventilation, containment, procedures for spill prevention, control and clean up, disposal of containers, rinsate, excess material, security, fire prevention, posting, temperature, product separation to prevent cross contamination. Responsibilities of pest control technicians, and other employees Major label revisions and national trends and updates relevant to pesticide use. Practical demonstration of use methods and techniques
- 2. Public Safety:** label requirements, transportation, mixing, loading, disposal, equipment cleanup, spill management; storage, application, precautions to prevent exposure & injury, acute & chronic toxicity, hazard determination, routes of exposure, symptoms of pesticide poisoning, allergies, reference sources including MSDS, telephone hotlines, emergency procedures, label requirements, major label revisions & national trends and updates, responsibilities of pest control technicians, & other employees, public education about pesticides & pesticide application, public relations, communication & trouble shooting; pesticide sensitivities, allergies, and phobias, including chemophobia and entomophobia.
- 3. Laws and Regulations:** pesticides, application, disposal, notification, transportation, registration, uses, licensing, worker protection, endangered species, storage, residues & tolerances, emergency planning and right to know, advertising, record keeping, business practices, insurance, training standards, supervision, agricultural chemicals & groundwater, consumer protection, compliance problems/actions, analysis of most frequent violations, discussions of specific problems & actions.
- 4. Applicator Safety:** label requirements, transportation, mixing, loading, disposal, equipment cleanup, spill management; storage, application, precautions to prevent exposure & injury, selection, care, and maintenance of protective clothing & safety equipment; acute & chronic toxicity, hazard determination, routes of exposure, symptoms of pesticide poisoning, allergies, first aid and emergency actions for pesticide exposure & use related injuries; reference sources including MSDS, telephone hotlines, emergency procedures, label requirements; major label revisions



& national trends and updates, responsibilities of pest control technicians, & other employees.

5. **Pesticide and their Families:** label requirements, label terminology, effect of failure to comply with label requirements, pesticide families & types, mode of action, other pesticide properties, formulation types, formulation of pesticides: properties, limitations, toxicity, dilution, mixing, uses; semiochemicals, adjuvant and additives, compatibility, synergism, persistence, environmental fate, resistance, mode of action (contact, systemic, etc.), mobility, leachability, potential for biological concentration and/or accumulation, volatility, solubility, inert ingredients and/or carriers, phytotoxicity, national trends on pesticide problems.
6. **Environmental Protection:** precautions to protect the environment & minimize the effects of pest management on it, including: identification of meteorological & climatic factors affecting application (drift, runoff, etc.); identification of terrain, soil, substrata influence on possible surface and ground water contamination; recognition of sensitive areas and organisms that could be affected by application, drift and runoff such as endangered species, wildlife, ornamentals, beneficial insects, humans, and domestic animals; identification of methods of spill prevention, control, and cleanup; observation of pre-harvest intervals; timing of applications for specific pest controls; and pesticide storage and transportation. Major label revisions and national trends and updates relevant to environmental protection. Responsibilities of qualified supervisors, certified operators, technicians and other employees

## Continuing Education Credit Guidelines for California and surrounding states

The following link provides information to inform workshop providers on how to get their workshops approved with State agencies. For information on a specific state please click on the [State in the table](#).

### General Guides

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- [History of Pesticide Safety](#) – Virginia Tech Pesticide Program has compiled an interesting collection of Pesticide Safety Video Clips from 1970's, Pesticide Safety Posters from the Late 60's and early 70's, Spray Chemicals and Application Equipment from 1945 and Pesticide Application Equipment from the 40's. We have come a long way from 1940's perception to Food Quality Protection Act of 1996 and other Pollution Prevention policies and programs.
- [Worker Protection Standard](#)
- [Pesticide Safety Information Series](#)- CA DPR Worker Health and Safety Branch developed Pesticide Safety Information Series (PSIS) leaflets primarily as a training aid for employees.



- [University of California Pesticide Safety Education Program](#)- The Pesticide Safety Education Program staff collaborates with industry, regulatory agencies, and campus and county-based Cooperative Extension personnel to develop materials and conduct training programs.
- [University of California: Pesticide Safety Publications](#)- A few of the publications of interest are:
  - WPS Training for Fieldworkers: Teaching Workers How to Protect Themselves from Pesticide Hazards in the Workplace
  - Reducing Pesticide Risks: An Interactive Program for Training Pesticide Handlers
  - Pesticide Applicator Instructor's Handbook, 4th edition
  - Pesticide Safety: A Reference Manual for Private Applicators
  - Pesticide Safety for Small Farms: A Grower's Guide to Pesticide Safety
- [“Reducing Risk Through Pesticide Safety and Education”](#) - A training video designed (by UC Pesticide Education Program) for pesticide applicators to minimize self and environmental exposure to pesticides: The Pesticide Education Program strives to educate all pesticide applicators and users across the Santa Clara County about pest management alternatives, including the safe, proper, and legal use of pesticides. The program promotes responsible decision-making, which will protect pesticide users, public health, plant and animal health, and the environment. (The 113-page [instructor's manual](#) (PDF 2782K) designed to be used with this video. Copies of this public-domain video are available from each state pesticide regulatory agency and [Cooperative Extension Service](#) pesticide applicator training coordinators). This training video is currently in use by SCC IPM Program as part of “Annual Pesticide Applicator Safety Education (IPM-PASE)” for pest control license holders, pest control maintenance workers and management staff in Department of Roads & Airport, FAF custodial and grounds staff and Department of Parks & Recreation. The California Department of Pesticide Regulation – Pest Management and Licensing branch has assigned 7 hours of continuing education units (CEU) to SCC IPM-PASE training. The training also meets the State mandated training requirements. For more information please contact the County IPM Manager- [Naresh.Duggal@ceo.sccgov.org](mailto:Naresh.Duggal@ceo.sccgov.org).
- [Model Certification Training Manual for Rights-of-Way Pesticide Applicators](#)- This manual was prepared by some of the nation’s leaders in right-of-way vegetation management. They represent the major regions of the U.S. and major right-of-way sectors. The manual reflects their knowledge and experience in training right-of-way applicators. Santa Clara County IPM Program has adopted this training manual as part of “SCC Annual Rights-of-way Pesticide Applicator Training”. For more information please contact the County IPM Manager- [Naresh.Duggal@ceo.sccgov.org](mailto:Naresh.Duggal@ceo.sccgov.org)
- [Virtual Pesticide Safety Education Institute](#)- This digital site was created and is maintained by Virginia Tech Pesticide Programs, a unit of the Department of Entomology and Virginia Cooperative Extension at the Virginia Polytechnic Institute & State University in Blacksburg, Virginia, USA.
- [Journal of Pesticide Safety Education](#)- The official journal of American Association of Pesticide Safety Educators
- [Federal Restricted Use Pesticides](#)
- [Toxicity Categories and Pesticide Label Statements](#)
- [Minimum PPE and work clothing for pesticide-handling activities](#) (chart on page 3)

- [Internet Resources for IPM Education in Schools](#)
- [California School IPM Program Training; School IPM: Health & Environment](#)
- [Pesticide and Aquatic Animals: A Guide to Reducing Impacts on Aquatic Systems](#) – Virginia Cooperative Extension
- [Purdue Pesticide Information](#) – The following publications are written for professionals who work in government, universities, associations, and also for the general public who want to understand pesticide issues beyond the headlines.
  - [Children and Poisoning](#)
  - [Communicating with News Media](#)
  - [Company Bulletin Board](#)
  - [Conflicts with Wildlife around the Home](#)
  - [DOT Rules of the Road: Putting Responsible Drivers and Safe Vehicles on the Road](#)
  - [EPA Chemical Resistance Category Chart](#)
  - [Landscape Pesticide Application Equipment](#)
  - [Lawn Care Pesticide Application Equipment](#)
  - [Offering Sound Pest Management Advice to the Public](#)
  - [Pesticide and Balancing Act](#)
  - [Pesticide and Commercial Vehicle Maintenance](#)
  - [Pesticide and Community Right to Know](#)
  - [Pesticide and Ecological Risk Assessment](#)
  - [Pesticide and Environmental Site Assessment](#)
  - [Pesticide and Epidemiology](#)
  - [Pesticide and Food Safety](#)
  - [Pesticide and Formulation Technology](#)
  - [Pesticide and Human Health Risk Assessment](#)
  - [Pesticide and Material Safety Data Sheet](#)
  - [Pesticide and Personal Protective Equipment: Selection, Care & Use](#)
  - [Pesticide and Personal Safety](#)
  - [Pesticide and Pest Prevention Strategies for the Home, Lawn and Garden](#)
  - [Pesticide and Planning for Emergencies](#)
  - [Pesticide and Risk Communication](#)
  - [Pesticide and Spill Management](#)
  - [Pesticide and the Home, Lawn and Garden](#)
  - [Pesticide and the Label](#)
  - [Pesticide and The Law](#)
  - [Pesticide and their proper storage](#)
  - [Pesticide and Water Quality](#)
  - [Pesticide and Wildlife](#)
  - [Pesticide Container Management](#)
  - [Pesticide Safety and Calibration Math for Home Owner](#)
  - [Pesticide Safety Tips for Workplace and Farm](#)
  - [Pesticide Toxicology, Evaluating Safety and Risk](#)
  - [Pesticides and Fleet Vehicles](#)
  - [Recognition and Management of Pesticide Poisonings](#)
  - [Stay on Target, Prevent Drift](#)



- [The Insurance Policy](#)
- [The Quick Response Emergency Plan](#)
- [The Why's and How-to's of Pesticide Record Keeping](#)

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